

Amendments to the Specification

Please replace the paragraph at page 8, lines 13-20 with the following:

In one embodiment, primary antenna 14 can have a sharpened distal end 14' to assist introduction through tissue. Each secondary antenna 16 has a distal end 16' that is constructed to be less structurally rigid than primary antenna 14. Distal end 16' is that section of secondary antenna 16 that is advanced from the lumen antenna 14 and into the selected tissue mass. Distal end 16' is typically less structurally rigid ~~than~~ primary antenna 14. However, even though ~~the~~ sections of secondary antenna 16 which are not advanced through the selected tissue mass may be less structurally rigid than primary antenna 14.

Please replace the paragraph at page 8, lines 21-29 with the following:

~~Structurally~~ Structural rigidity is determined by, (i) choosing different materials for antenna 14 and distal end 16' or some greater length of secondary antenna 16, (ii) using the same material but having less of it for secondary antenna 16 of distal end 16', e.g., secondary antenna 16 or distal end 16' is not as thick as primary electrode 14, or (iii) including another material in one of the antennas 14 or 16 to vary their structural rigidity. For purposes of this disclosure, structural rigidity is defined as the amount of deflection that an antenna has relative to its longitudinal axis. It will be appreciated that a given antenna will have different levels depending on its length.

Please replace the paragraph at page 9, lines 7-16 with the following:

Each of primary or secondary antennas 14 or 16 can have different lengths. The lengths can be determined by the actual physical length of an antenna, the amount of an antenna that has an ablation delivery surface, and the length of an antenna that is not covered by an insulator. Suitable lengths include but are not limited to 17.5 cm, 25.0 cm and 30.0 cm. The actual length of an antenna depends on the location of the selected tissue mass to be ablated, its distance from the skin, its accessibility, as well as whether or not the physician chooses a laparoscopic laparoscopic, percutaneous or

other procedure. Further, ablation treatment apparatus 10, and more particularly multiple antenna device 12, can be introduced through a guide to the desired tissue mass site.

Please replace the paragraph at page 9, line 24 through page 10, line 4, with the following:

In one embodiment, insulation sleeve 18 can comprise a polyamide material. A sensor 24 may be positioned on top of polyimide polyamide insulation sleeve 18. The polyamide insulation sleeve 18 is semi-rigid. Sensor 24 can lay down substantially along the entire length of polyamide insulation sleeve 18. Primary antenna 14 is made of a stainless-steel hypodermic tubing with 2 cm of exposed ablation surface. Secondary antennas 16 have distal ends 16' that are made of NiTi hypodermic tubing. A handle is included with markings to show the varying distance of secondary antennas 16 from primary antenna 14. Fluid infusion is delivered through a Luer port at a side of the handle. Type-T thermocouples are positioned at distal ends 16'.

Please replace the paragraph at page 11, line 21 to page 12, line 3, with the following:

In one embodiment, a method for creating an ablation volume in a selected tissue mass 28 includes[::] providing a monopolar ablation device with a primary antenna 14, a secondary antenna 16 with a distal end 16', and an energy source electromagnetically coupled to both antennas. A ground pad electrode is also included. The primary antenna 14 is inserted into the selected tissue mass 28 with the secondary antenna distal end 16' positioned in the primary antenna 14 lumen. The secondary antenna distal end 16' is advanced out of the primary antenna 14 lumen into the selected tissue mass 28 in a lateral direction relative to a longitudinal axis of the primary antenna 14. Electromagnetic energy is delivered from one of a primary antenna 14 ablation surface, a secondary antenna 16 ablation surface or both to the selected tissue mass 28. This creates an ablation volume in the selected tissue mass 28.

Please replace the paragraph at page 12, lines 14-18, with the following:

A number of parameters permit ablation of selected tissue masses, including but not limited to tumors[[,]] of different sizes and shapes including[[,]] a series of ablations having primary and secondary antennas 14 and 16 with variable length ablation surfaces, the use of sensors 24₁ and the use of the feedback control system.

Please replace the paragraph at page 12, line 19 to page 13, line 13, with the following:

As illustrated in Figure 2, primary antenna 14 has been introduced into a selected tissue mass 28. One or more secondary antennas 16 are positioned within a primary antenna lumen as primary antenna 14 is introduced into and through the selected tissue mass 28. Subsequently, secondary antenna distal end 16' is advanced out of aperture 26 and into selected tissue mass 28. Insulation sleeves 18 are adjusted for primary and secondary antennas 14 and 16₁, respectively. RF, microwave, short wave and the like energy is delivery delivered to antenna 16 in a monopolar mode (RF), or alternatively, multiple antenna device 12 can be operated in a bipolar mode (RF). Multiple antenna device 12 can be switched between monopolar and bipolar operation and has multiplexing capability between antennas 14 and 16. Secondary antenna distal end 16' is retracted back into primary antenna 14, and primary antenna is then rotated. Secondary antenna distal end 16' is then introduced into selected tissue mass 28. Secondary antenna 16 may be introduced a short distance into selected tissue mass 28 to ablate a small area. It can then be advanced further into selected tissue mass 28 any number of times to create more ablation zones. Again, secondary antenna distal end 16' is retracted back into primary antenna 14, and primary antenna 15 can be[[,]] (i) rotated again, (ii) moved along a longitudinal axis of selected tissue mass 28 to begin another series of ablations with secondary antenna distal end 16' being introduced and retracted in and out of primary antenna 14, or (iii) removed from selected tissue mass 28. A number of parameters permit ablation of selected tissue masses 28 of different sizes and shapes, including a series of ablations having primary and secondary antennas 14 and 16 with variable length ablation surfaces and the use of sensor 24.

Please replace the paragraph at page 13, lines 14-28, with the following:

In Figure 3, two secondary antennas 16 are each deployed out of distal end 14' and introduced into selected tissue mass 28. Secondary antennas 16 form a plane, and the area of ablation extends between the ablation surfaces of primary and secondary antennas 14 and 16. Primary antenna 14 can be introduced in an adjacent relationship to selected tissue mass 28. This particular deployment is particularly useful for small selected tissue masses 28, or where piercing selected tissue mass 28 is not desirable. Primary antenna 14 can be rotated, with secondary antennas 16 retracted into a central lumen of primary antenna 14, and another ablation volume defined between the two secondary antennas 16 is created. Further, primary electrode antenna 14 can be withdrawn from its initial position adjacent to selected tissue mass 28, and secondary antennas 16 deployed to begin another ablation cycle. Any variety of different positionings positions may be utilized to create a desired ablation geometry for selected tissue masses of different geometries and sizes.

Please replace the paragraph at page 14, lines 12-17, with the following:

Secondary antennas 16 can serve the additional function of anchoring multiple antenna device 12 in a selected mass 28, as illustrated in Figures 6(a) and 6(b). In Figure 6(a) one or both secondary antennas 16 are used to anchor and position primary antenna 14. Further, one or both secondary antennas 16 are also used to ablate tissue. In Figure 6(b), three secondary antennas 16 are deployed and anchor primary antenna 14.

Please replace the paragraph at page 14, lines 18-26, with the following:

Figure 6(c) illustrates the infusion capability of multiple antenna device 12. Three secondary antennas 16 are positioned in central lumen 14" of primary antenna 14. One or more of the secondary antennas 16 can also include a central lumen coupled to an infusion source. Central lumen 14" is coupled to an infusion source and delivers a variety of infusion mediums to selected places both within and outside of the targeted

ablation mass 28. Suitable infusion mediums include, but are not limited to, therapeutic agents, conductivity enhancement mediums, contrast agents or dyes, and the like. An example of a therapeutic agent is a chemotherapeutic agent.

Please replace the paragraph at page 14, line 27 to page 15, line 6, with the following:

As shown in Figure 7, insulation sleeve 18 can include one or more lumens for receiving secondary antennas 16 which are deployed out of an insulation sleeve distal end 18'. Figure 8 illustrates two three secondary antennas 16 being introduced out of insulation sleeve distal end 18', and two secondary antennas 16 introduced through apertures 26 formed in primary antenna 14. As illustrated, the secondary electrodes antennas 16 introduced through apertures 26 provide an anchoring function. It will be appreciated that Figure 8 illustrates how secondary antennas 16 can have a variety of different geometric configurations in multiple antenna device 12.

Please delete the paragraph at page 18, line 10.